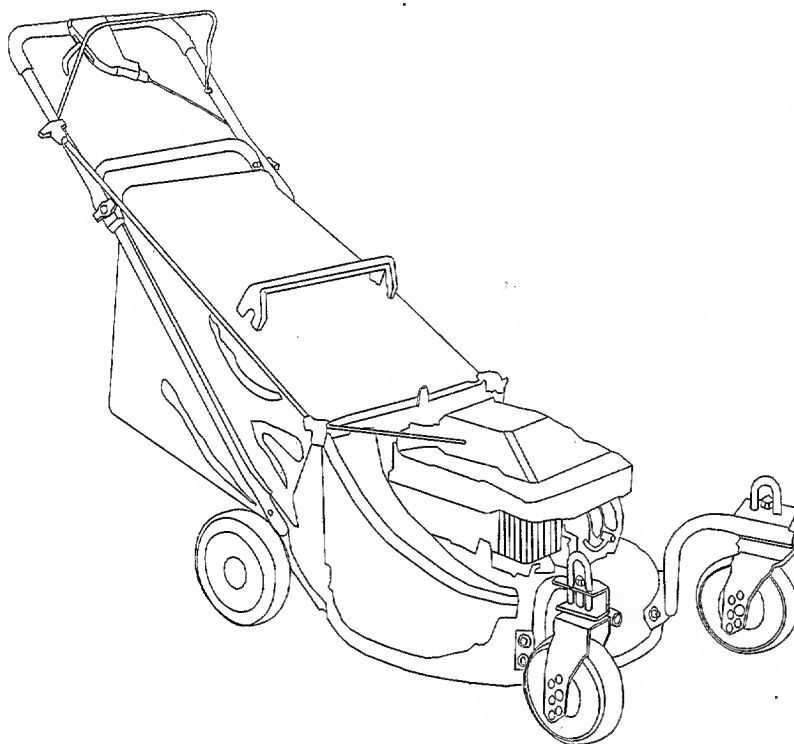




OPERATOR'S MANUAL

**Model Series
820**



IMPORTANT: READ SAFETY RULES AND INSTRUCTIONS CAREFULLY

Warning: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department, P.O. Box 368022 Cleveland, Ohio 44136-9722.

MTD PRODUCTS INC. P.O. BOX 368022 CLEVELAND, OHIO 44136-9722

SECTION 1: FINDING YOUR MODEL NUMBER

This Operator's Manual is an important part of your new walk behind. It will help you assemble, prepare and maintain your walk behind. Please read and understand what it says.

Before you start to prepare your walk behind for its first use, please locate the model plate and copy the information from it in this Operator's Manual. The information on the model plate is very important if you need help from your dealer or the MTD customer support department.

- Every walk behind has a model plate. You can locate it by standing behind the unit in the operating position and looking down at the rear of the deck. See Figure 1.

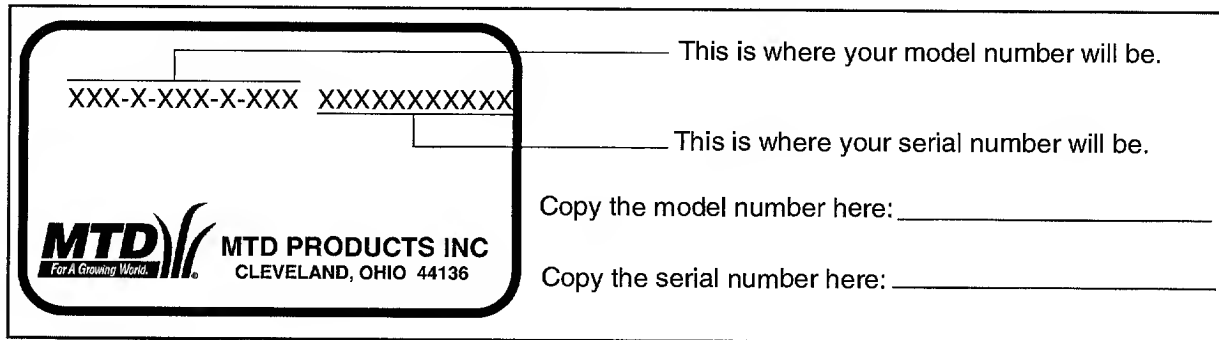


Figure 1

SECTION 2: CALLING CUSTOMER SUPPORT

- **LOCATE YOUR MODEL NUMBER AND SERIAL NUMBER** — Record this information in the space provided. To find your unit's specific model number and serial number, see SECTION 1: FINDING YOUR MODEL NUMBER.
- If you are having difficulty assembling this product or if you have any questions regarding the controls, operation or maintenance of this unit, please call the Customer Support Department.
- Customer Support can be reached by dialing: **1- (330) 220-4MTD (4683)**
or
1- (800)-800-7310
- Please have your model number and serial number ready when you call.
- Although both numbers are important, you will be asked to enter only your **serial** number before your call can be processed.

SECTION 3: IMPORTANT SAFE OPERATION PRACTICES



WARNING: THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR LAWN MOWER. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY. WHEN YOU SEE THIS SYMBOL, HEED ITS WARNING.



WARNING: The Engine Exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.



DANGER: Your lawn mower was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. This lawn mower is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

1. GENERAL OPERATION

- Read this operator's manual carefully in its entirety before attempting to assemble this machine. Read, understand, and follow all instructions on the machine and in the manual(s) before operation. Be completely familiar with the controls and the proper use of this machine before operating it. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
- Your rotary mower is a precision piece of power equipment, not a plaything. Therefore, exercise extreme caution at all times. Your unit has been designed to perform one job: to mow grass. Do not use it for any other purpose.
- Never allow children under 14 years old to operate a power mower. Children 14 years old and over should only operate mower under close parental supervision. Only responsible individuals who are familiar with these rules of safe operation should be allowed to use your mower.
- Keep the area of operation clear of all persons, particularly small children and pets. Stop engine when they are in the vicinity of your mower to help prevent blade contact or thrown object injury. Although the area of operation should be completely cleared of foreign objects, an object may have been overlooked and could be accidentally thrown by the mower in any direction and cause serious personal injury to the operator or any others allowed in the area.
- Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts. Shirts and pants that cover the arms and legs and steel-toed shoes are recommended. Do not wear loose fitting clothes or jewelry. They can be caught in moving parts. Never operate a unit in bare feet, sandals, slippery or light weight (e.g. canvas) shoes.
- Always wear safety glasses or safety goggles during operation or while performing an adjustment or repair, to protect eyes from foreign objects that may be thrown from the machine in any direction.
- Thoroughly inspect the area where the equipment is to be used. Remove all stones, sticks, wire, bones, toys and other foreign objects which could be picked up and thrown by the mower in any direction and cause serious personal injury to the operator or any others allowed in the area. Plan your mowing pattern to avoid discharge of material toward roads, sidewalks, bystanders and the like. To help avoid a thrown objects injury, keep children, bystanders and helpers at least 75 feet from the mower while it is in operation.
- Do not put hands or feet near or under rotating parts. Keep clear of discharge opening at all times as the rotating blade can cause injury.
- Many injuries occur as a result of the mower being pulled over the foot during a fall. Do not hang on to the mower if you are falling; release the handle immediately.
- Never pull the mower toward you while you are walking. If you must back the mower away from a wall or obstruction first look down and behind, and then follow these steps:
 - Step back from the mower to fully extend your arms.
 - Be sure you are well balanced with sure footing.
 - Pull the mower back slowly, no more than half way toward you.
 - Repeat these steps as needed.
- Do not operate the mower while under the influence of alcohol or drugs.

- Do not engage the self-propelled mechanism on units so equipped while starting engine.
- The blade control handle is a safety device. Never attempt to bypass its operation. Doing so makes the safety device inoperative and may result in personal injury through contact with the rotating blade. The blade control handle must operate easily in both directions and automatically return to the disengaged position when released.
- Never operate the mower in wet grass. Always be sure of your footing. A slip and fall can cause serious personal injury. Keep a firm hold on the handle and walk, never run. If you feel you are losing your footing, **RELEASE THE BLADE CONTROL HANDLE IMMEDIATELY** and the blade will stop rotating within three seconds.
- Mow only in daylight or good artificial light.
- Stop the blade when crossing gravel drives, walks or roads.
- If the equipment should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
- Shut the engine off and wait until the blade comes to a complete stop before removing the grass catcher or unclogging the chute. The cutting blade continues to rotate for a few seconds after the engine is shut off. Never place any part of the body in the blade area until you are sure the blade has stopped rotating.
- Never operate mower without proper guards, grass catcher, plates or other safety protective devices in place.
- Muffler and engine become hot and can cause a burn. Do not touch.
- Only use accessories approved for this machine by the manufacturer. Read, understand, and follow all instructions provided with the approved accessory.
- If situations occur which are not covered in this manual, use care and good judgment. Contact your dealer for assistance. Telephone 1-800-800-7310 for the name of your nearest dealer.

2. SLOPE OPERATION

For your safety, use the slope gauge included as part of this manual to measure slopes before operating this unit on a sloped or hilly area. If the slope is greater than 15 degrees as shown on the slope gauge, do not operate this unit on that area or serious injury could result.

DO:

- Mow across the face of slopes; never up and down. Exercise extreme caution when changing direction on slopes.
- Watch for holes, ruts, hidden objects, or bumps. Tall grass can hide obstacles.

- Always be sure of your footing. A slip and fall can cause serious personal injury. If you feel you are losing your balance release the blade control handle immediately and the blade will stop in less than 3 seconds.

DO NOT:

- Do not mow near drop-offs, ditches or embankments. The operator could lose footing or balance.
- Do not mow slopes greater than 15 degrees as shown on the slope gauge.
- Do not mow on wet grass. Reduced footing could cause slipping.

3. CHILDREN

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the mower and the mowing activity. Never assume that children will remain where you last saw them.

- Keep children out of the mowing area and under the watchful care of a responsible adult other than the operator.
- Be alert and turn mower off if a child enters the area.
- Before and while moving backwards, look behind and down for small children or other objects.
- Never allow children under age 14 to operate the mower. Children 14 years of age and above should read and understand the operation instructions and safety rules in this manual.
- Use extreme care when approaching blind corners, shrubs, trees, or other objects that may obscure your vision of a child or hazard.

4. SERVICE

- Use extreme care in handling gasoline and other fuels. They are extremely flammable and the vapors are explosive.
- Use only an approved gasoline container.
- Never remove gas cap or add fuel while the engine is running. Allow engine to cool at least two minutes before refueling.
- Replace gasoline cap securely and wipe off any spilled gasoline before starting the engine as it may cause a fire or explosion.
- Extinguish all cigarettes, cigars, pipes and other sources of ignition.
- Never refuel machine indoors because flammable vapors will accumulate in the area.
- Never store the machine or fuel container inside where there is an open flame or spark such as a gas water heater, space heater, or furnace.
- Never run an engine inside a closed area.

- To reduce fire hazard, keep mower free of grass, leaves, or other debris build-up. Clean up oil or fuel spillage. Allow mower to cool at least 5 minutes before storing.
- Before cleaning, repairing, or inspecting, make certain the blade and all moving parts have stopped. Disconnect the spark plug wire, and keep the wire away from the spark plug to prevent accidental starting.
- Check the blade and engine mounting bolts at frequent intervals for proper tightness. Also, visually inspect blade for damage (e.g., bent, cracked or worn). Replace with blade which meets original equipment specifications listed in this manual.
- Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
- Never tamper with safety devices. Check their proper operation regularly.
- After striking a foreign object, stop the engine, remove the wire from the spark plug, and thoroughly inspect the mower for any damage. Repair the damage before starting and operating the mower.
- Never attempt to make a wheel or cutting height adjustment while the engine is running.
- Grass catcher components are subject to wear, damage and deterioration, which could expose moving parts or allow objects to be thrown. For safety protection, frequently check components and replace with manufacturer's recommended parts, when necessary.
- Mower blades are sharp and can cut. Wrap the blade(s) or wear gloves, and use extra caution when servicing them.
- Do not change the engine governor setting or overspeed the engine. Excessive engine speeds are dangerous.



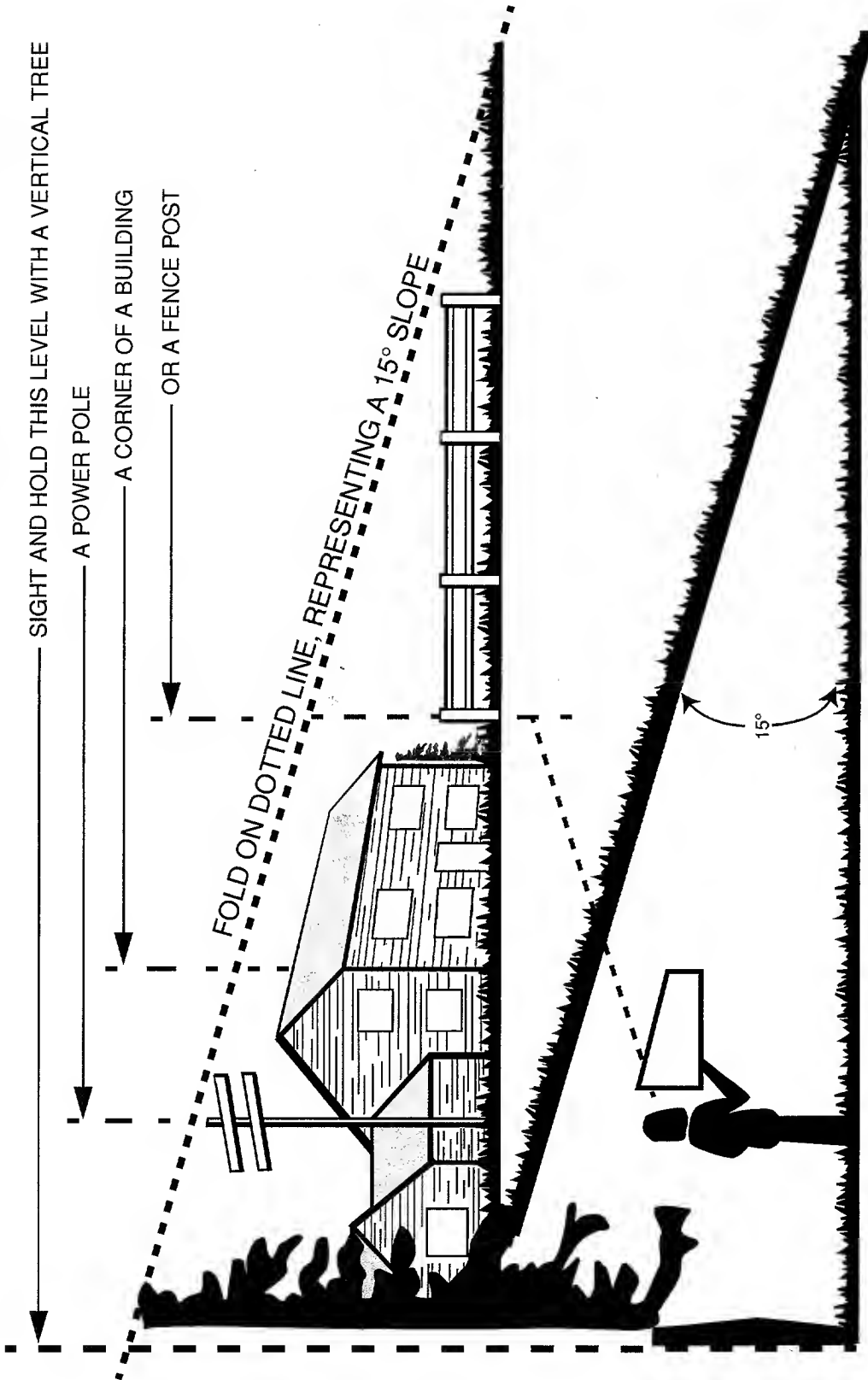
WARNING - YOUR RESPONSIBILITY: Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine.



Figure 2 Safety Labels Found On Lawn Mower

SLOPE GAUGE

USE THIS PAGE AS A GUIDE TO DETERMINE SLOPES WHERE YOU MAY NOT OPERATE SAFELY.



WARNING

Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately 2-1/2 feet every 10 feet). A riding mower could overturn and cause serious injury. If operating a walk-behind mower on such a slope, it is extremely difficult to maintain your footing and you could slip, resulting in serious injury.

Operate RIDING mowers up and down slopes, never across the face of slopes.

Operate WALK-BEHIND mowers across the face of slopes, never up and down slopes.

SECTION 4: UNPACKING

TO REMOVE UNIT FROM CARTON

1. Remove staples, break glue on top flaps, or cut tape at carton end and peel along top flap to open carton.
2. Remove loose parts if included with unit (i.e., grass bag, operator's manual, etc.).
3. Cut along dotted lines and lay carton down flat.
4. Remove packing material.
5. Roll or slide unit out of carton. Check carton thoroughly for loose parts.

TOOLS REQUIRED FOR ASSEMBLY

Pair of Pliers

DISCONNECT SPARK PLUG WIRE

Before setting up your lawn mower, disconnect the spark plug wire from the spark plug, and ground it against the engine by attaching rubber boot to a bolt or metal clip to the grounding post on the engine. See Figure 3.

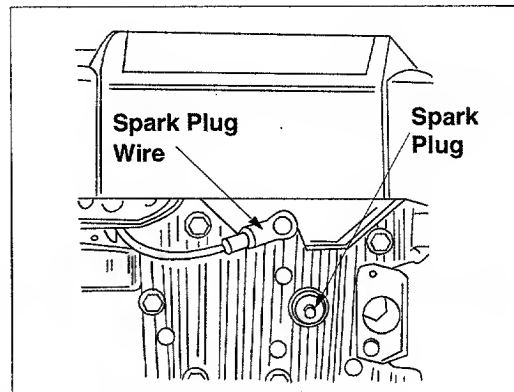


Figure 3

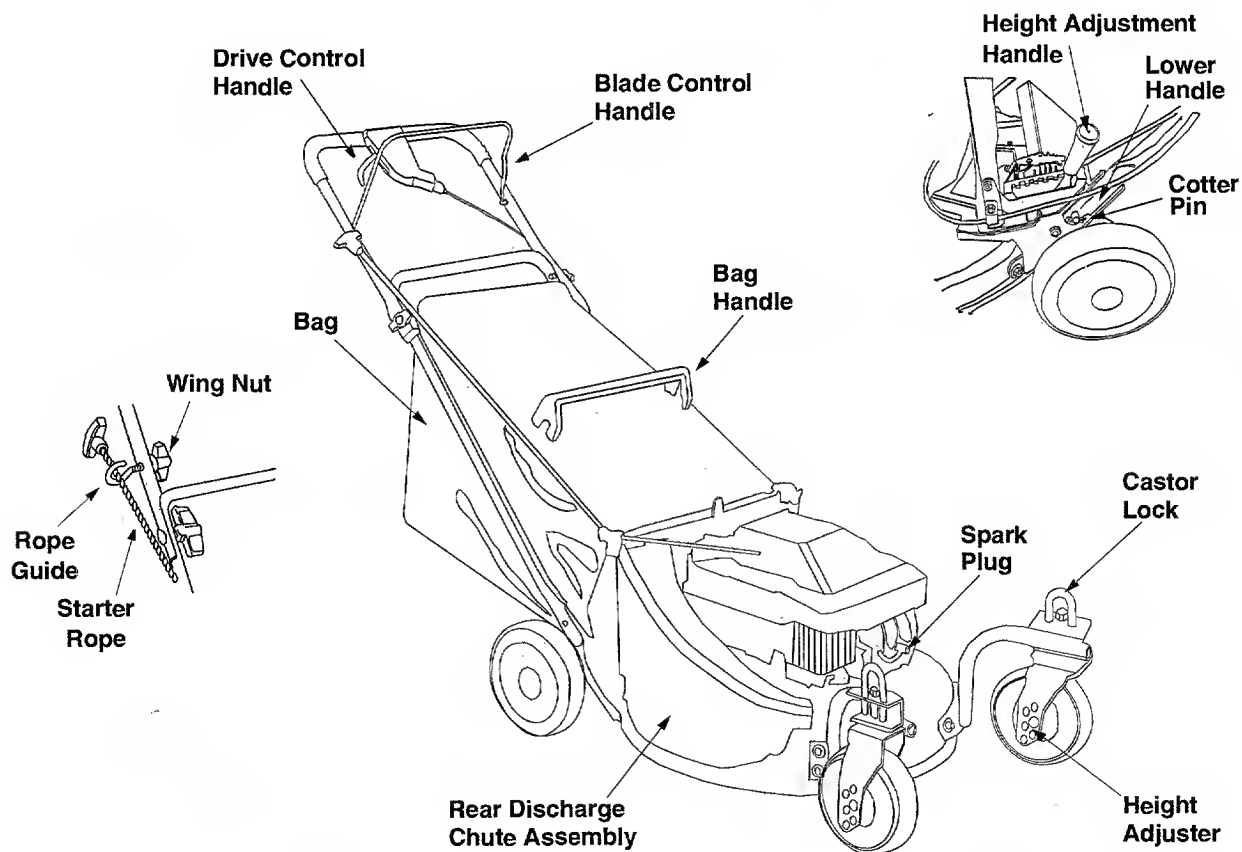


Figure 4

SECTION 5: SET-UP INSTRUCTIONS

IMPORTANT: This unit is shipped WITHOUT GASOLINE or OIL in the engine. Be certain to service engine with gasoline and oil before operating your mower.

NOTE: Reference to right or left hand side of the mower is observed from the operating position.

TO ATTACH HANDLE TO MOWER

(Refer to Figure 4)

1. Disconnect the spark plug wire and move it away from spark plug.
2. Remove any packing material which may be between the upper and lower handles for shipping purposes.
3. For shipping purposes, your mower is set with the rear wheels in the lowest cutting position. Raise the rear wheels to the highest setting for assembly of handle.
4. Remove the hairpin clips from the outer hole in the weld pins on the handle mounting brackets.
5. Lift the handle and attach by placing the bottom holes in the lower handle over the weld pins on the handle mounting brackets. Make certain the lower handle is seated securely into the handle mounting brackets.
6. Pull up on the upper handle to raise it into the operating position. Tighten the wing nuts on each side of the handle.

NOTE: Your mower is shipped with the handle in the higher height position. If you wish to lower the height of the handle, refer to the Adjustment Section at this time.

7. Secure the handle assembly by placing the hairpin clips in the inner hole on weld pins.
8. The rope guide is attached to the right side of upper handle. Loosen the wing nut which secures the rope guide.
9. With the spark plug wire disconnected and grounded, hold the blade control handle against the upper handle, and pull the starter rope out of the engine. Release the blade control handle. Slip the starter rope into the rope guide. Tighten the wing nut.
10. Make certain **all** nuts and bolts are tightened securely.

TO ATTACH BAG TO MOWER

1. Swing open the chute door on the catcher panel and hold in this position. See Figure 5.

2. Slide the frame of the grass catcher down into the channels on each side of the mower. The hooks on the frame go over the panel on the discharge chute.
3. To remove the grass catcher, hold the chute door and lift the grass catcher straight up, using the handle.

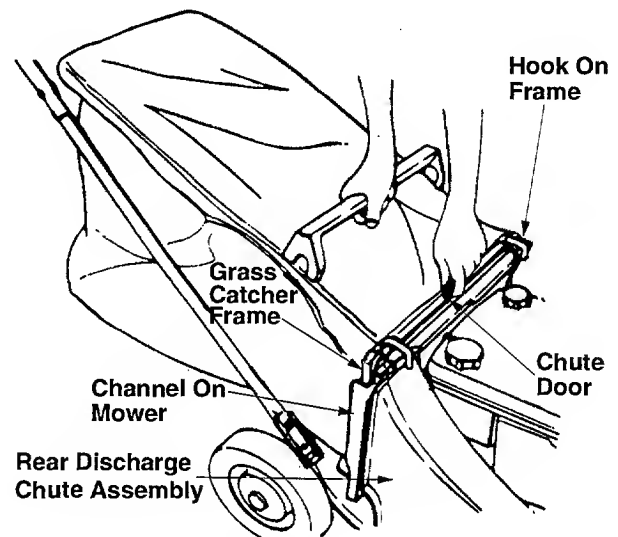


Figure 5

TO CONVERT MOWER TO SIDE DISCHARGE

1. Remove the rear discharge chute assembly by removing two wing nuts. Lift up on the two bottom corners of the discharge chute assembly, and slide it off the deck.
2. Attach the side chute deflector by first placing it over the rear bolt in the side of the deck. Then slide the notch in the top of the deflector around the shoulder bolt on top of the deck. Slide the notch in the side of the deflector around the front bolt in the side of the deck. See Figure 6.

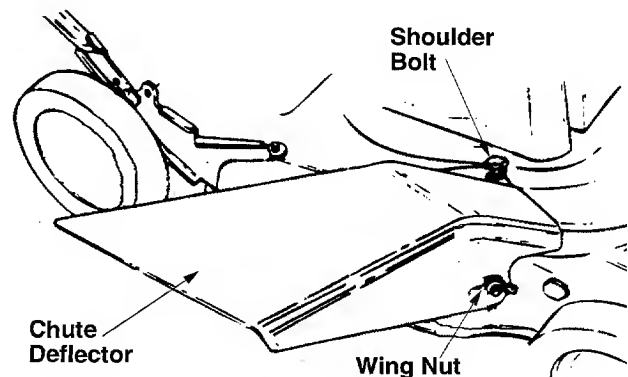


Figure 6

3. Secure the front of the chute deflector to the bolt on the side of the deck with one wing nut. See Figure 6. Secure the back of the chute deflector in the same manner. See Figure 7.

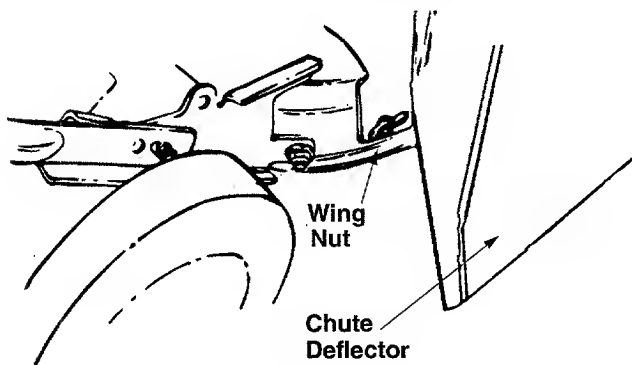


Figure 7

TO CONVERT MOWER TO A MULCHER

1. Remove either the rear discharge chute assembly or the side chute deflector from the mower as instructed previously.
2. Attach the mulching plug by first placing it over the rear bolt in the side of the deck. Then slide the notch in the top of the mulching plug around the shoulder bolt on the top of the deck. Slide the notch in the side of the mulching plug around the front bolt in side of the deck. Secure using two wing nuts. See Figure 8.

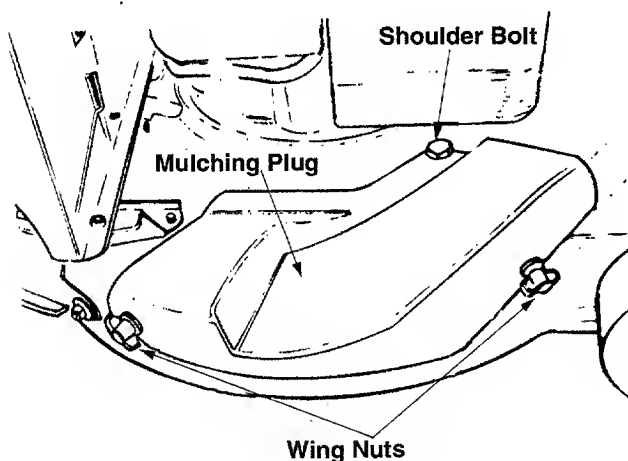


Figure 8

REPLACING THE REAR DISCHARGE CHUTE

1. Slide the ribs on the discharge chute assembly under the flange on rear panel as you insert the side of the discharge chute under the two tabs. See Figure 9.

2. The edge of the discharge chute assembly goes under the shoulder bolt on deck. Push down on the chute assembly, and slide the bottom corner slots over the bolts on side of deck.
3. Press down on the discharge chute assembly and secure with wing nuts. Make certain wing nuts are seated properly.



WARNING: Never operate your unit without either the side chute deflector, mulching plug or entire rear discharge chute and grass catcher assembly in place.

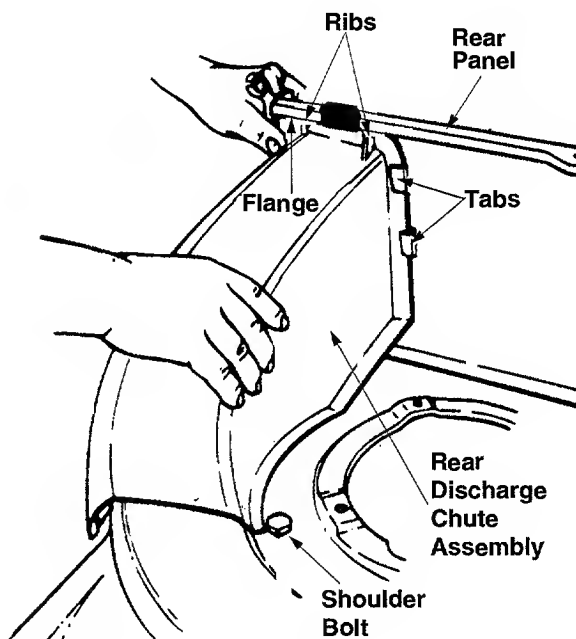


Figure 9

SECTION 6: CONTROLS

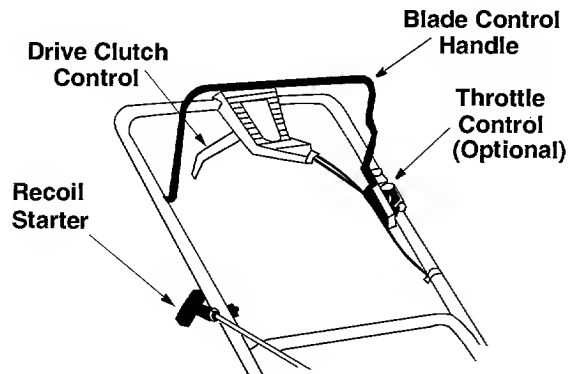


Figure 10

OPTIONAL THROTTLE CONTROLS

Your unit may be equipped with 1 of 3 throttle controls. Follow instructions which pertain to your unit.

- The throttle control is located on the left side of the upper handle. It is used to regulate the engine speed.
- The throttle control is located on the engine. It is used to regulate the engine speed.
- Your engine is equipped with a constant speed throttle, which is set at full throttle for best performance.



WARNING: The throttle control cannot be used to stop the engine. If your throttle control is located on the engine, do not adjust the throttle control with the engine running.

RECOIL STARTER

The recoil starter handle is attached to the handle and is used to start the engine. See Figure 10.

BLADE CONTROL HANDLE



WARNING: This control mechanism is a safety device. Never attempt to bypass its operations.

The blade control handle is located on the upper handle of the mower. See Figure 10. The blade control handle must be depressed in order to operate the unit. Release the blade control handle to stop the engine and blade.



WARNING: The blade will be rotating whenever the engine is running.

DRIVE CLUTCH CONTROL

Squeezing the drive clutch control engages the drive mechanism to the wheels. Releasing the clutch control stops the wheels from driving. Release the drive clutch control to slow down when negotiating an obstacle, making a turn or stopping. See Figure 10.

SECTION 7: OPERATION



WARNING: Keep hands and feet away from the chute area on cutting deck. See Warning Label, Figure 2 on page 5.



WARNING: The operation of any lawn mower can result in foreign objects being thrown into the eyes, which can result in severe eye damage. Always wear safety glasses or eye shields. We recommend wide vision safety mask for over spectacles or standard safety glasses.

NOTE: For shipping purposes your mower is set with the wheels in a low cutting height position. For best results raise the cutting position until it is determined which height is best for your lawn. See cutting height adjustment section.

GAS AND OIL FILL-UP

Service the engine with gasoline and oil as instructed in the separate engine manual packed with your mower. Read instructions carefully.



WARNING: Never fill fuel tank indoors, with engine running or until the engine has been allowed to cool for at least two minutes after running.

BEFORE STARTING

1. Before each use, check for proper drive clutch operation by performing the following before starting the engine:
 - With the drive clutch control released, push mower forward. It should move freely. Pull mower backward. It should move with only a small amount of resistance.
 - If it does not and the rear wheels tend to lock up, the clutch may not be releasing completely. Do not start the engine until corrections have been made. Check the control cable for severe bend, kinks and binding, or grass build-up around the belt. Correct and adjust as required. Refer to instructions under "Drive Clutch Control Adjustment" in Adjustment Section for loosening the drive belt.
2. Attach spark plug wire to spark plug. Make certain the metal cap on the end of the spark plug wire (inside the rubber boot) is fastened securely over the metal tip on the spark plug.

TO START ENGINE AND ENGAGE BLADE



WARNING: When starting the unit for the first time, face the mower against a solid object such as a wall, fence, ect. Start the unit, and if it shows any signs of motion with the drive clutch control disengaged, shut the engine off immediately. Make certain the drive clutch control is adjusted so the drive belt is as loose as possible. Refer to the Adjustment Section.

1. Move the throttle control lever (if equipped) all the way to the fast position.
2. Prime engine as instructed in the separate engine manual packed with your unit.
3. Standing behind the unit, depress the blade control handle and hold it against the upper handle. Make certain drive clutch control handle is released.
4. Grasp starter handle and pull rope out slowly until engine reaches start of compression cycle (rope will pull slightly harder at this point). Let the rope rewind slowly.
5. Pull rope with a rapid, continuous, full arm stroke. Keep a firm grip on starter handle. Return it slowly to the rope guide.

6. After engine starts, move throttle control to FAST or desired engine speed. (Mower is designed to be operated at full throttle.)

NOTE: If any problems are encountered, refer to the Trouble Shooting Guide.



WARNING: Never operate your unit without either the side chute deflector or entire rear discharge chute and grass catcher assembly in place.

TO STOP ENGINE AND BLADE

1. Release the blade control handle to stop the engine and blade.



WARNING: The blade continues to rotate for a few seconds after the engine is shut off.

2. Disconnect the spark plug wire and ground it against the engine to prevent accidental starting while equipment is unattended.

USING YOUR ROTARY MOWER

Be sure that lawn is clear of stones, sticks, wire, or other objects which could damage lawn mower or engine. Such objects could be accidentally thrown by the mower in any direction and cause serious personal injury to the operator and others.

For the best results, do not cut wet grass because it tends to stick to the underside of the mower, preventing proper discharge of grass clippings, and could cause you to slip and fall. New grass, thick grass or wet grass may require a narrower cut. Blade speed should be adjusted to the condition of the lawn.

When using the side discharge mower, the best mowing pattern is one that allows the clippings to discharge towards the uncut part of the lawn. This permits recutting of the clippings to further pulverize them. When cutting high weeds, discharge towards cut portion, then recut at right angles to first direction.

For a healthy lawn, never cut more than one-third of the total length of the grass at any one cutting. Lawn should be cut in the fall as long as there is growth.

This mower is designed to be operated at full throttle to give you the best cut and do the most effective job of bagging the cut grass.



WARNING: If you strike a foreign object, stop the engine. Remove wire from spark plug, thoroughly inspect the mower for any damage, and repair the damage before restarting and operating the mower. Extensive vibration of the mower during operation is an indication of damage. The unit should be promptly inspected and repaired.

USING YOUR MULCHER

For effective mulching, do not cut wet grass because it tends to stick to the underside of the deck, preventing proper mulching of grass clippings. New or thick grass may require a narrower cut. The ground speed should be adjusted to the condition of the lawn. If mowing has been delayed and the grass has been allowed to grow in excess of 4", mulching is not recommended. Mow using the grass bag (if so equipped) to reduce the grass height to 3-1/4" maximum before mulching. Never cut more than one-third off the total length of the grass at any one cutting.

SECTION 8: ADJUSTMENTS



WARNING: Do not at any time make any adjustment to lawn mower without first stopping engine and disconnecting spark plug wire.

CUTTING HEIGHT ADJUSTMENT

The height adjustment handle for the rear wheels is located on the left side of the deck. The handle may be placed in one of six cutting height positions. Push the handle to the left and then either forward to lower the cutting height or backward to raise the cutting height. See Figure 11.

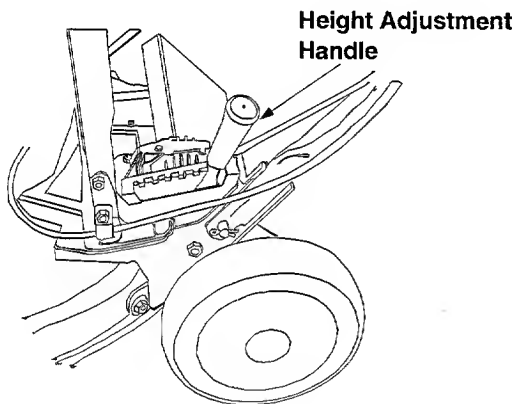


Figure 11

The front wheel cutting height is determined by the selection of one of six positions in each caster assembly.

To adjust, remove the wing nut from the axle bolt. Slide the axle bolt and spring washer from the assembly and select a cutting height. With the spring washer on the axle bolt, reinsert hardware in the square hole desired, through the wheel assembly and secure with wing nut previously removed.

All wheels must be placed in the same relative position. For rough or uneven lawns, use a higher cutting height.

HANDLE HEIGHT ADJUSTMENT

Your mower is shipped with the handle ready to assemble in the higher height position. To lower the handle height, proceed as follows

1. Remove the starter rope from the rope guide.
2. Remove the upper handle by removing the hand knobs and carriage bolts. Lay the upper handle out of the way, being careful not to bend or kink the cables.
3. Remove the hairpin clips from the weld pins on the handle brackets. Press outward on the legs of the lower handle, and remove it from the mower.
4. Turn the lower handle around so the notches on the bottom of the lower handle are facing forward. See Figure 12. Reassemble, placing the bottom holes in the handle over the weld pins in the handle mounting bracket.
5. Reassemble the upper handle.
6. Place the hairpin clips in the inner holes in the weld pins and attach the starter rope as instructed in the Set-Up Instructions.

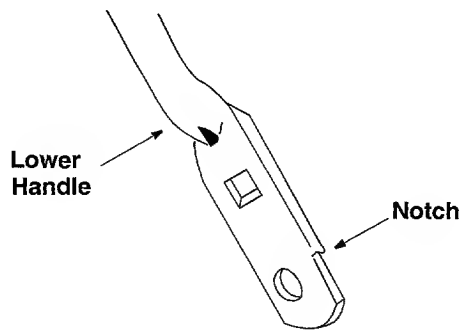


Figure 12

DRIVE CLUTCH ADJUSTMENT

Use the adjustment wheel located on the underside of the clutch control housing to tighten the drive belt, if mower does not self-propel with the drive clutch control engaged, or if drive belt is slipping (unit hesitates while engine maintains the same speed). See Figure 13.

In addition, the adjustment wheel may also be used to determine the position in which the drive clutch control is engaged. If it is more comfortable to have the drive engaged with the lever further away from the handle, tighten the drive belt.

Make certain to retest the unit for neutral as instructed in the Operation Section. Move the adjustment wheel in the opposite direction to loosen the drive belt if necessary.

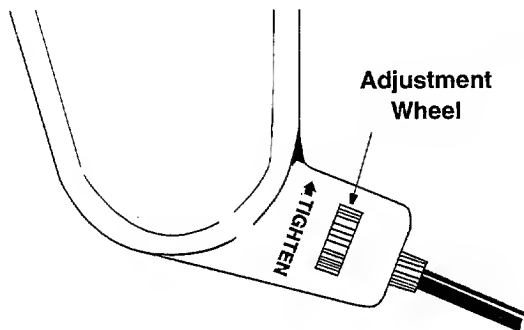


Figure 13

THROTTLE CONTROL ADJUSTMENT

NOTE: If the throttle control is located on the engine or if it is a constant speed throttle, the throttle will not need adjustment.

If the throttle control located on the left side of the upper handle requires adjustment or if it has been replaced, adjust the throttle control as follows.

1. Remove the screw shown in Figure 14. Remove the cable clamp from the cable.
2. Push the throttle control lever on the handle all the way forward as far as it will go, then back it off one "click". Make certain the throttle control remains in this position.
3. Push the control lever on the engine as far toward the rear of the engine as it will go. Secure the cable in this position with the cable clamp and screw.

NOTE: If you have a Tecumseh engine, simply loosen the screw shown in Figure 15, so the cable will move freely beneath the clamp. It is not necessary to remove the screw and clamp completely.

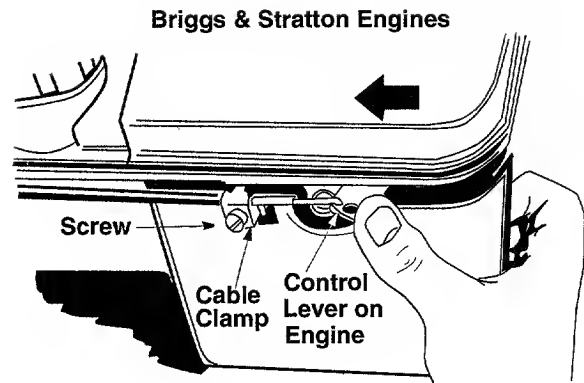


Figure 14

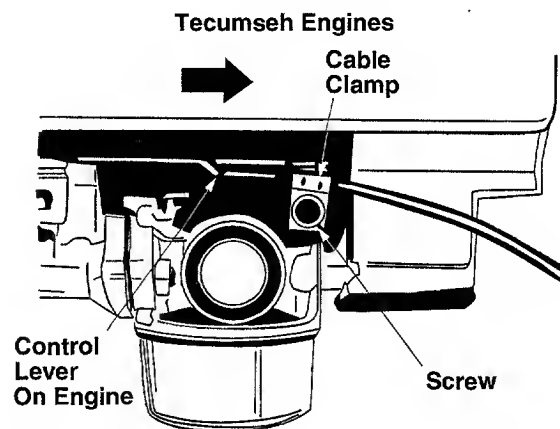


Figure 15

CARBURETOR ADJUSTMENTS



WARNING: If any adjustments are made to the engine while the engine is running (e.g. carburetor), keep clear of all moving parts. Be careful of heated surfaces and muffler.

Minor carburetor adjustments may be required to compensate for differences in fuel, temperature, altitude and load. To adjust carburetor, refer to the separate engine manual packed with your mower.

NOTE: A dirty air cleaner will cause an engine to run rough. Be certain air cleaner is clean and attached to the carburetor before adjusting carburetor.

SECTION 9: LUBRICATION



WARNING: Always stop engine and disconnect spark plug wire before cleaning, lubricating or doing any kind of work on lawn mower.

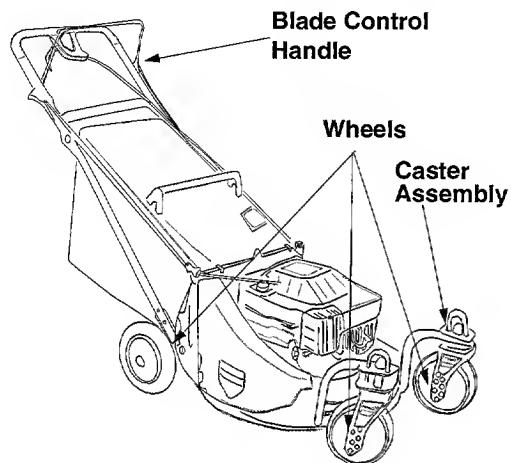


Figure 16

Blade Control: Lubricate the pivot points on the blade control handle and the brake cable at least once a season with light oil. See Figure 16. The blade control must operate freely in both directions.

Wheels: Lubricate the wheel at least once a season with light oil (or engine oil). Also, if the wheels are removed for any reason, lubricate the surface of the axle bolt and the inner surface of the wheel with light oil. See Figure 16.

Caster Assembly: Grease fittings are provided for easy lubrication of the swivel pins located on the front caster assembly. See Figure 16.

Engine: Follow engine manual for lubrication instructions.

SECTION 10: MAINTENANCE



WARNING: Be sure to disconnect and ground the spark plug wire before performing any repairs or maintenance.

NOTE: When tipping the unit, empty the fuel tank and keep engine spark plug side up.

TROUBLE SHOOTING

Refer to the trouble shooting guide for more information.

CUTTING BLADE

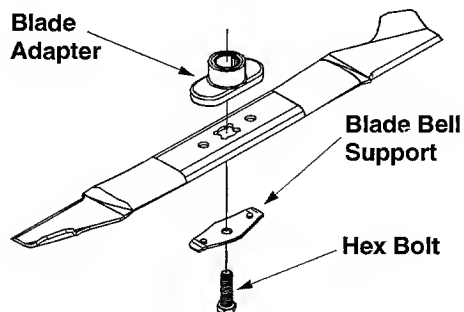


Figure 17

- When removing the cutting blade for sharpening or replacement, protect hands by using heavy gloves or a rag before grabbing the blade.
- Remove the bolt and blade bell support which hold the blade and adapter to the engine crankshaft. See Figure 17.
- Remove the blade and adapter from the crankshaft.



WARNING: Periodically inspect the blade adapter and pulley for cracks, especially if you strike a foreign object. Replace when necessary.

When sharpening the blade, follow the original angle of grind as a guide. It is extremely important that each cutting edge receives an equal amount of grinding to prevent an unbalanced blade. An unbalanced blade will cause excessive vibration when rotating at high speeds. It may cause damage to the mower, and it could break causing personal injury.

The blade can be tested by balancing it on a round shaft screwdriver. Remove metal from the heavy side until it balances evenly. It is recommended that the blade always be removed from the adapter for the when testing for balance.

Before reinstalling the blade and the blade adapter to the unit, lubricate the engine crankshaft and the inner surface of the blade adapter with light oil.

- Be sure to install the blade with the side of the blade marked "Bottom" (or with part number) facing the ground when the mower is in the operating position.
- Slide blade adapter onto engine crankshaft.
- Place blade on adapter. Be certain the blade is aligned with and seated onto the blade adapter flanges.
- Place blade bell support on blade. Make sure the notches on the blade bell support are aligned with the small hole in the blade.
- Replace hex bolt.
- Tighten hex bolt to torque: 450 in. lbs. min., 600 in. lbs. max.

DECK

The underside of the mower deck should be cleaned after each use to prevent a buildup of grass clippings, leaves, dirt or other matter. If this debris is allowed to accumulate, it will invite rust and corrosion, and may cause an uneven discharge of grass clippings at the next cutting.

The deck may be cleaned by tilting the mower and scraping clean with a suitable tool (make certain the spark plug wire is disconnected).

ENGINE

Refer to the separate engine manual for engine maintenance instructions.

Maintain **engine oil** as instructed in the separate engine manual packed with your unit. Read and follow instructions carefully.

Service **air cleaner** every 25 hours under normal conditions. Clean every few hours under extremely dusty conditions. Poor engine performance and flooding usually indicates that the air cleaner should be serviced. To service the air cleaner, refer to the separate engine manual packed with your unit.

The **spark plug** should be cleaned and the gap reset once a season. Spark plug replacement is recommended at the start of each mowing season; check engine manual for correct plug type and gap specifications.

Clean the engine regularly with a cloth or brush. Keep the cooling system (blower housing area) clean to permit proper air circulation which is essential to engine performance and life. Be certain to remove all grass, dirt and combustible debris from muffler area.

BELT REMOVAL AND REPLACEMENT

1. Disconnect the spark plug wire and ground it against the engine.
2. Drain the fuel tank or place a piece of plastic beneath the cap to prevent gasoline leakage.
3. Remove the grass bag, rear discharge chute assembly and catcher panel.
4. Remove the transmission belt cover by removing three bolts. See Figure 18.
5. Tip the mower on its side, and block securely.

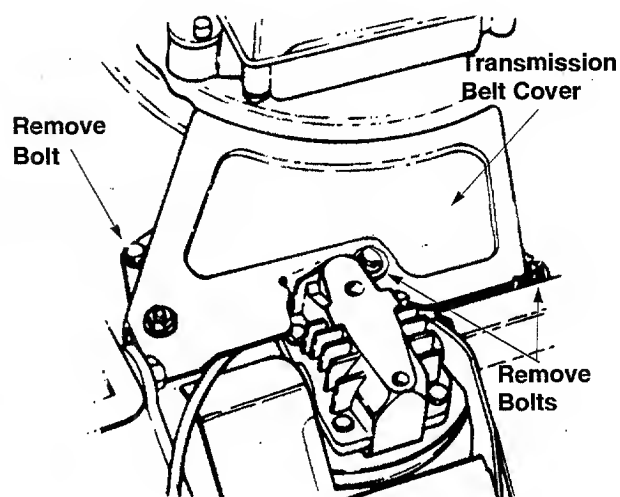


Figure 18

6. Remove the inside belt guard by removing two self-tapping screws. A 3/8" wrench is required. See Figure 19.

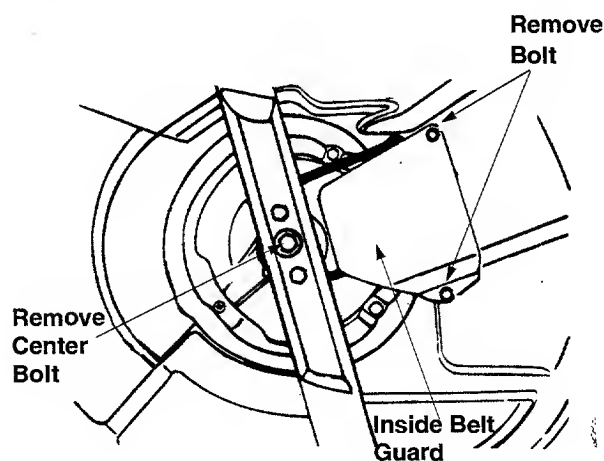


Figure 19

7. Loosen (do not remove) the bolt which secures the idler pulley so you can remove the belt from between the idler pulley and the belt guard on the idler pulley bracket. See Figure 20.

8. Remove the belt from the transmission pulley by pulling it underneath the pulley.
9. Remove the belt from around the blade.

Note: Before reassembling, it is suggested that you remove the idler pulley from the idler bracket, and clean and re-grease the needle bearing inside the pulley using an all-purpose grease. When reassembling, cupped side of washer must be against the idler bracket.

10. Reassemble new belt, following instructions in reverse order.

NOTE: When reassembling the transmission belt cover, be certain the belt guard on the transmission cover is approximately 1/8" away from the belt. Make certain to tighten all nuts and bolts securely. If plastic was placed under the gas cap, be certain to remove it.

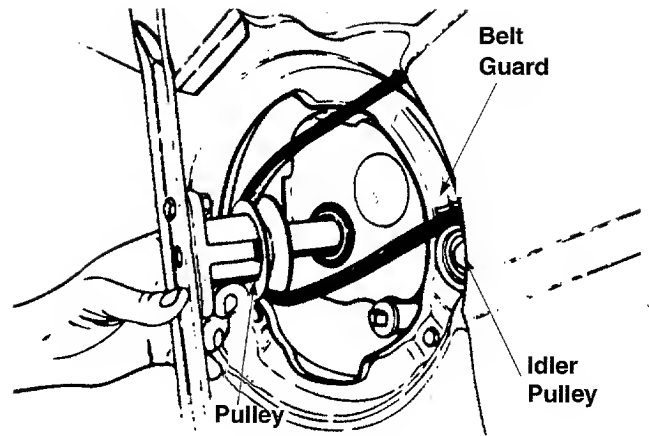


Figure 20

SECTION 11: OFF-SEASON STORAGE

The following steps should be taken to prepare lawn mower for storage.

1. Clean and lubricate mower thoroughly as described in the lubrication instructions.
2. Refer to engine manual for correct engine storage instructions.
3. Coat mower's cutting blade with chassis grease to prevent rusting.
4. Store mower in a dry, clean area. Do not store next to corrosive materials, such as fertilizer.

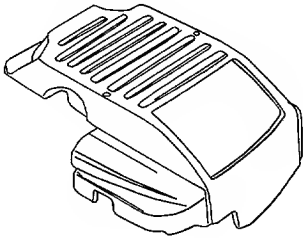
NOTE: When storing any type of power equipment in an unventilated or metal storage shed, care should be taken to rust-proof the equipment. Using a light oil or silicone, coat the equipment, especially cables and all moving parts.

SECTION 12: TROUBLE SHOOTING GUIDE

Trouble	Possible Cause(s)	Corrective Actions
Engine fails to start	Blade control handle disengaged. Spark plug wire disconnected. Dirty air cleaner. Primer button not depressed. Throttle control lever not in correct starting position (if so equipped). Fuel tank empty or stale fuel. Blocked fuel line (if so equipped). Faulty spark plug. Engine flooded.	Engage blade control handle. Connect wire to spark plug. Refer to the engine manual packed with your unit. Refer to the engine manual packed with your unit. Move throttle lever to FAST or START position. Fill tank with clean fresh gasoline. Fuel will not last over thirty days unless a fuel stabilizer is used. Clean fuel line. Clean, adjust gap or replace. Refer to the engine manual packed with your unit.
Engine runs erratic	Unit running in START position. Spark plug wire loose. Blocked fuel line (if so equipped) or stale fuel. Vent in gas cap plugged. Water or dirt in fuel system. Dirty air cleaner. Carburetor out of adjustment.	Move throttle lever to FAST position. Connect and tighten spark plug wire. Check spark plug for fouling. Clean fuel line; fill tank with clean, fresh gasoline. Fuel will not last over thirty days unless a fuel stabilizer is added. Clear vent or threads or replace. Drain fuel tank. Refill with fresh fuel. Refer to the engine manual packed with your unit. Refer to the engine manual packed with your unit.
Engine overheats	Engine oil level low. Dirty air cleaner. Air flow restricted. Carburetor not adjusted properly.	Fill crankcase with proper oil. Refer to the engine manual packed with your unit. Stop engine and disconnect spark plug wire. Remove blower housing and clean. Refer to the engine manual packed with your unit or see an authorized service dealer.*
Occasional skip (hesitates) at high speed	Spark plug gap too close. Carburetor idle mixture adjustment improperly set.	Adjust gap to .030". Refer to the engine manual packed with your unit.
Idles poorly	Spark plug fouled, faulty or gap too wide. Carburetor improperly adjusted. Dirty air cleaner.	Reset gap to .030" or replace spark plug. Refer to the engine manual packed with your unit. Refer to the engine manual packed with your unit.
Excessive vibration	Cutting blade loose or unbalanced. Bent cutting blade.	Tighten blade and adapter. Balance blade. See an authorized service dealer.
Mower will not mulch grass	Engine speed too low. Wet grass. Excessively high grass.	Set throttle between 3/4 and full throttle. Do not mow when grass is wet; wait until later to cut. Mow once at a high cutting height, then mow again at desired height or make a narrower cutting swath (1/2 width).
Uneven cut	Wheels not positioned correctly. Dull blade.	Place all four wheels in same height position. Sharpen or replace blade.
Wheels will not propel	Belt not installed properly. Debris clogging mechanism.	Check belt for proper pulley installation and movement. Clean out debris.

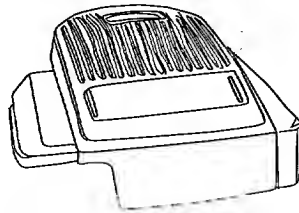
Note: For repairs beyond the minor adjustments above, contact your local authorized service dealer.

Shroud Chart



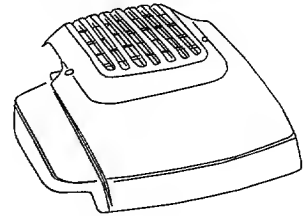
Part No.	Color
751B281439	Dark Red
751B281440	Black
751B281443	Bright Red

Hardware: 710-1256 (Screw)



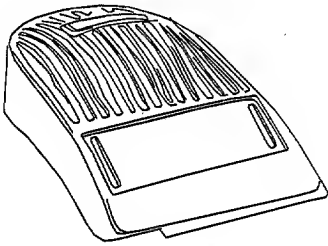
Part No.	Color
731-1395A	Red
731-1396A	Black
731-1397A	Gray

Hardware: 710-1256 (Screw)



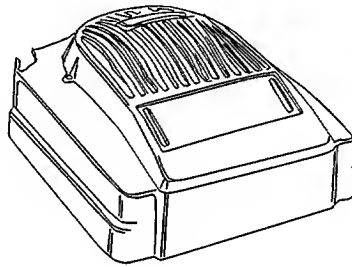
Part No.	Color
731-1402A	Yellow
731-1694	Black
731-1695	Silver
731-1934	Charcoal

Hardware: 710-1256 (Screw)



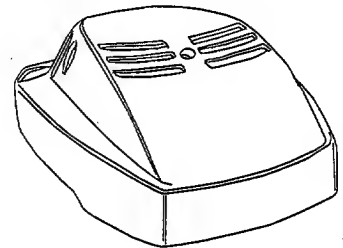
Part No.	Color
731-1585B	Black

Hardware: 710-1274 (Screw)



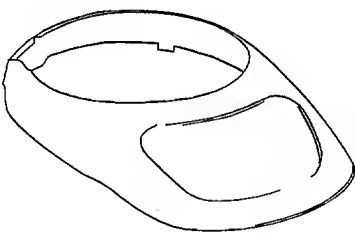
Part No.	Color
731-1586B	Black
731-1612A	Red

Hardware: 7510042823 (Screw)

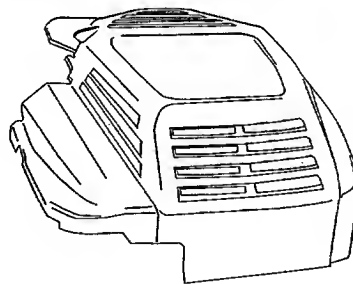


Part No.	Color
7510143208	Black

Hardware: 7510042823 (Screw)

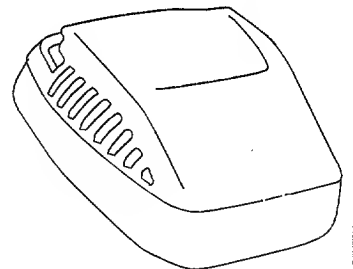


Part No.	Color
7511681311	Black
7511681911	Red
7511682011	Gray



Part No.	Color
751B281451	Gray

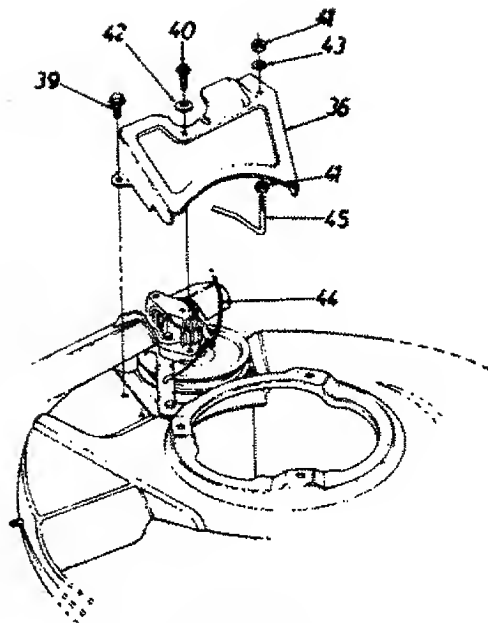
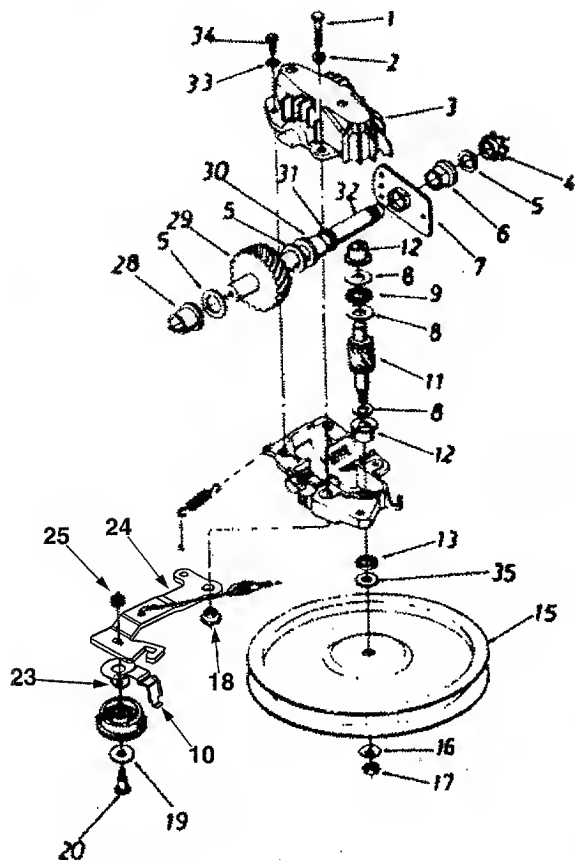
Hardware: 710-1256 (Screw)



Part No.	Color
751B281476	Black
751B281777	Yellow

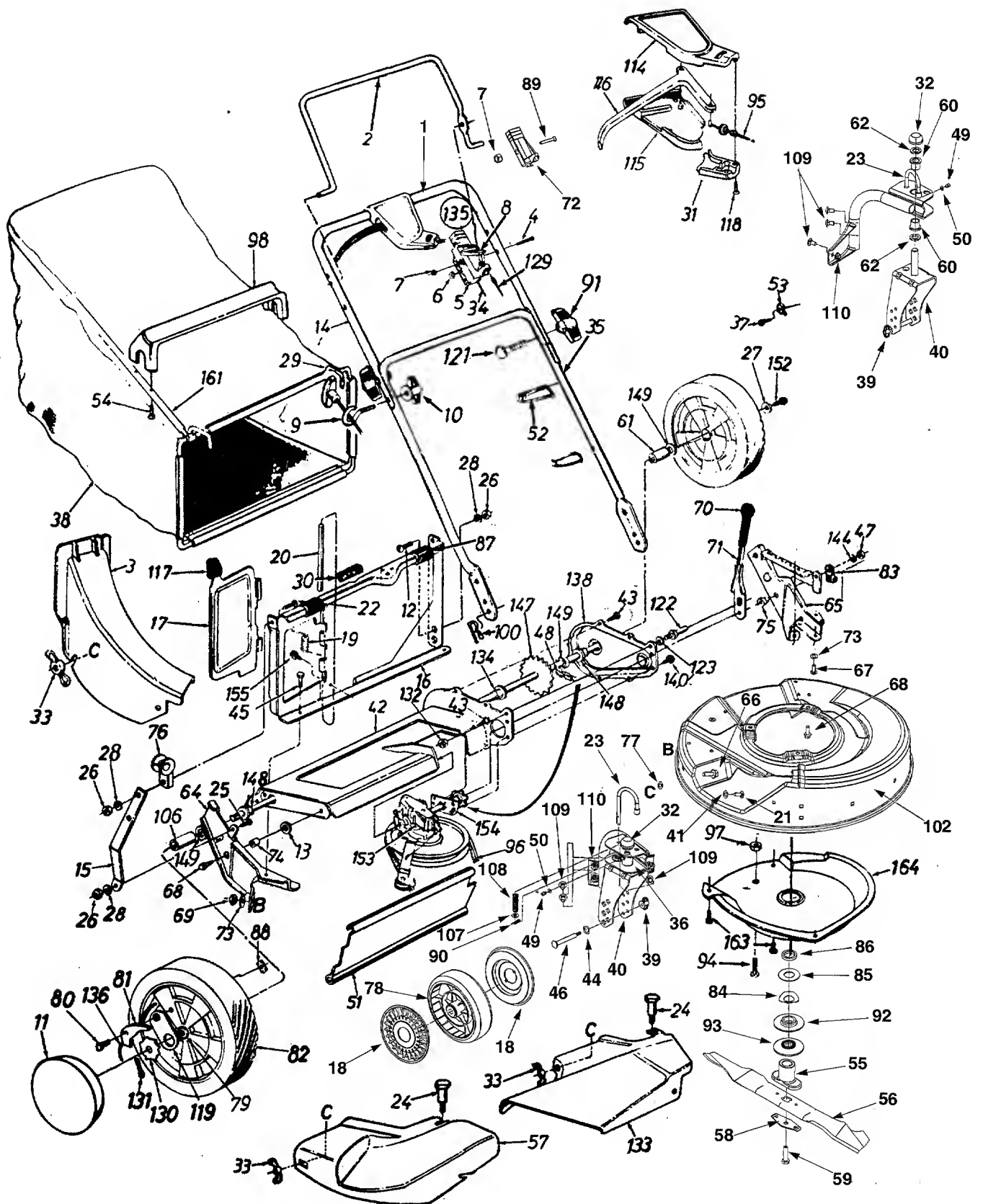
Hardware: 710-1237 (Screw)

Model Series 820



REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	710-1062	Hex Bolt w/Patch 1/4-20 x 1.25"	24	782-7570	Idler Bracket Ass'y
2	726-0329	L-Washer 1/4" ID	25	712-0138	Hex Lock Nut 1/4-28
3	717-0418A	Upper Housing Half	26	732-0357A	Extension Spring 1.12"
4	713-0400	#48 Sprocket 7 Tooth x 1/2 Pitch	27	717-0419B	Lower Housing Half
5	736-0336	Flat Washer 5/8" ID x .030 OD	28	741-0415	Flange Bearing .56"
6	741-0413	Hex Flange Bearing .631" ID	29	717-0422A	33 Tooth Helical Gear
7	16500A	Hex Bearing Cup	30	741-0414	Flange Bearing .629"
8	736-0314	Thrust Washer .382" ID x .70" OD	31	721-0213	Oil Seal .625"
9	741-0479	Thrust Bearing .375" ID x .812" OD	32	738-0607B	Gear Sprocket Shaft
10	782-7569	Belt Keeper	33	736-0722	Lock Washer #10
11	717-1216	11 Tooth Helical Gear	34	710-0436	Hex Tap Screw #10 x .62"
12	748-0208A	Flange Bearing	35	736-0410	Hex Washer .26" x .88"
13	721-0212	Oil Seal	36	17718	Transmission Belt Guard
15	756-0330A	Pulley 5.06" ID	39	710-0599	Hex Tap Screw 1/4 x .50"
16	736-0270	Bell Washer .265" ID x .75" OD	40	710-0896	Hex Tap Screw 1/4 x .62"
17	712-0351	Hex Nut 1/4-28 LH Thread	41	712-0287	Hex Nut 1/4-20
18	738-0440	Shoulder Spacer .375"	42	736-0270	Bell Washer .265" ID x .75"
19	736-0344	Flat Washer .390" ID x 1.0" OD	43	736-0329	Lock Washer 1/4" ID
20	738-0826	Shoulder Bolt .375" x .40"	44	746-0710A	SP Cable - 48"
21	756-0558	Idler Pulley 1.50"	45	747-0549	SP Belt Guard
22	741-0556	Needle Bearing .375" x .31"		618-0055	Transmission Complete
23	736-0270	Bell Washer .265" ID x .75"			

Model Series 820



Model Series 820

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	720-0294	Foam Handle †	52	726-0240	Cable Tie
2	747-0824	Control Lever	53	751B213146	Cable Clamp †
3	731-1023	Rear Discharge Chute Ass'y	54	710-1025	Hex Screw #12 x 1.25" <i>748-0376C</i>
4	710-0605	Oval C-Sunk Screw †	55	753-0500	Blade Adapter Kit
5	646-0875	Throttle Body †	56	742-0741	21" Mulching Blade
6	736-0501	Spring Washer .66" †	57	731-0564	Mulching Plug
7	712-0324	Hex L-Nut 1/4-20 †	58	736-0524A	Blade Bell Support
8	746-0876	Throttle Lever †	59	710-1044	Hex Bolt 3/8-24 x 1.5"
9	710-1205	Rope Guide	60	741-0685	Flange Bearing
10	720-0279	Wing Nut 1/4-20	61	748-0190	Spacer .513" ID x .69"
11	731-0981A	Hub Cap Spoke	62	736-0366	Flat Washer 5/8 ID x 1.0 OD
12	710-0896	Truss Machine Screw 1/4-14 x .625	64	16136C	RH Handle Wheel Bracket Ass'y
13	736-0258	Flat Washer .383" ID x 1" OD	65	682-0532	LH Handle Wheel Bracket Ass'y
14	749-0439C	Upper Handle	66	710-0260	Carriage Bolt 5/16-18 x .62"
15	16129A	Panel Support Bracket	67	710-0603	Hex Tap Screw 5/16-18
16	16862	Rear Catcher Panel Ass'y	68	710-0654A	Hex Tap Screw 3/8-16
17	17095A	Rear Discharge Door	69	712-0267	Hex Nut 5/16-18
18	731-1887	Hub Cap Spoke w/Hole	70	720-0223	Grip
19	732-0483A	Torsion Spring	71	732-0606	Height Adjuster Lever
20	747-0514	Pivot Pin	72	746-0883	Throttle Housing w/o Lever
21	710-0134	Carriage Bolt 1/4-20 x .62"	73	736-0242	Bell Washer 5/16"
22	710-0924	Truss Machine Screw 1/4-20 x .75"	74	750-0736	Spacer
23	747-0924	Lock Pin	75	750-0624	Shoulder Spacer .50"
24	738-0704	Shoulder Bolt .312 x .18	76	719-0279	Rope Guide
25	710-0751	Hex Bolt 1/4-20 x .62"	77	726-0233	Bolt Retainer
26	712-0287	Hex Nut 1/4-20	78	734-1857	Front Wheel Ass'y Comp
27	736-0270	Bell Washer 1/4"	79	741-0486B	Bearing 1/2" ID
28	736-0329	Lock Washer 1/4"	80	738-0137	Shoulder Screw
29	747-0705	Front Grass Catcher Frame	81	748-0188B	Pawl
30	722-0139	Foam Strip	82	734-1979	Rear Wheel Ass'y Comp
31	731-1059	SP Control Cover	83	726-0175	Clamp
32	726-0214	Push Cap	84	736-0514	Flat Washer
33	712-0397	Wing Nut w/ Washer	85	736-0513	Spring Washer .89" ID
34	746-0674	Throttle Control Wire 61" †	86	748-0358	Crankshaft Spacer
35	749-0907A	Lower Handle	87	731-0880	Panel Clip
36	682-9021A	Caster Ass'y LH	88	712-0414	Weld L-Nut 1/4-20
	682-9020A	Caster Ass'y RH	89	710-1270	Screw 1/4-20 x 20
37	710-1237	Hex Tap Screw #10-32 x .62" †	90	714-0104	Cotter Pin
38	664-0082	Grass Bag	91	720-0276	Hand Knob
39	712-0397	Wing Nut	92	756-0962	Pulley Half-Upper
40	682-9026	Caster Bracket Ass'y LH	93	756-0961	Pulley Half-Lower
	682-9024	Caster Bracket Ass'y RH	94	710-0578	Machine Screw 1/4-20
41	736-0204	Flat Washer .344" ID x .62"	95	746-0710A	Sp Cable
42	17055B	Chain - Axle Ass'y	96	754-0343	V-Belt
43	710-0352	Hex Tap Screw 1/4" x .38"	97	712-0271	Sems Nut 1/4-20
44	736-0232	Wave Washer	98	731-0801	Bag Handle
45	710-0776A	Hex Tap Screw 1/4 x .62"	100	714-0104	Hairpin Clip
46	711-1146	Caster Axle	102	782-0098	Deck
47	712-0296	Hex Lock Nut 3/8-24	106	711-0313	Sleeve
48	713-0353	#48 Chain .500" Pitch x 30 Links	107	736-0264	Flat Washer .330 ID x .630 OD
49	737-3000	Lube Fitting	108	732-0306	Compression Spring
50	736-0931	Flat Washer	109	710-0260	Carriage Bolt 5/16-18 x .62
51	731-1488	Rear Flap	110	712-3004A	Flange Lock Nut 5/16-18

† Optional

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
114	731-1057	SP Control Cover	135	811-00185	Throttle Box Comp
115	731-1058	SP Control Cover	136	10622B	Nylon Spring
116	731-0620	Control Lever	138	17053A	Chain Cover
117	720-0190	Door Grip	140	710-0599	Hex Tap Screw 1/4-20 x .50"
118	710-1667	C Sunk Head Tap Screw #10-16 x .625	144	736-0300	Flat Washer
119	16855	Pawl Plate	147	738-0719A	Rear Shaft Ass'y
121	710-1174	Curved Carriage Bolt 5/16-18 x 2"	148	741-0324	Hex Flange Bearing .506" ID
122	711-0805	Shoulder Pin 3/8-24 x 1.43"	149	736-0160	Flat Washer .531" x .930"
123	736-0169	Lock Washer 3/8" ID	152	710-0751	Hex Bolt 1/4-20 x .62
129	746-0922	Control Cable	153	618-0055	Transmission Comp
130	748-0318	Ratchet Wheel 1.62" OD	154	16500A	Hex Bearing Cup
131	714-0115	Cotter Pin	155	710-0429	Hex Tap Screw #10 x .38
132	712-0711	Hex Jam Nut 3/8-24	161	749-0764A	Rear Catcher Frame
133	731-0884	Side Chute Deflector Ass'y	163	710-0352	Hex Tap Screw 1/4 x .38"
134	741-0522	Hex Flange Bearing	164	782-7555	Mulching Baffle

IMPORTANT: For a proper working machine, use Factory Approved Parts.

V-BELTS are specially designed to engage and disengage safely. A substitute (non OEM) V-belt can be dangerous by not disengaging completely.

MANUFACTURER'S LIMITED WARRANTY FOR:



For TWO YEARS from the date of retail purchase within the United States of America, its possessions and territories, MTD PRODUCTS INC will, at its option, repair or replace, for the original purchaser, free of charge, any part or parts found to be defective in material or workmanship. This warranty covers units which have been operated and maintained in accordance with the operating instructions furnished with the unit, and which have not been subject to misuse, abuse, commercial use, neglect, accident, improper maintenance or alteration.

Normal wear parts or components thereof are subject to separate terms as noted below in the "No Fault Ninety Day Consumer Warranty" clause.

All normal wear part failures will be covered on this product for a period of 90 days regardless of cause. After 90 days, but within the two year period, normal wear parts failures will be covered ONLY IF caused by defects in material or workmanship of OTHER component parts. Normal wear parts are defined as batteries*, belts, blades, blade adapters, grass bags, rider deck wheels, seats, snow thrower skid shoes, shave plates and tires.

How to obtain service: Warranty service is available, with proof of purchase, through your local authorized service dealer. To locate the dealer in your area, please check the yellow pages or contact the Customer Service Department of MTD PRODUCTS INC, P. O. Box 368022, Cleveland, Ohio 44136-9722. Phone 1 (330) 273-4683. The return of a complete unit will not be accepted by the factory unless prior written permission has been extended by the Customer Support Department of MTD PRODUCTS INC.

Transportation charges: Transportation charges for the movement of any power equipment unit or attachment are the responsibility of the purchaser.

Units exported out of the United States: MTD PRODUCTS INC does not extend any warranty for products sold or exported outside of the United States of America, its possessions and territories, except those sold through MTD PRODUCTS INC's authorized channels of export distribution.

Other Warranties:

1. The engine or component parts thereof carry separate warranties from their manufacturers. Please refer to the applicable manufacturer's warranty on these items.
2. *Batteries are covered by a 90-day replacement warranty.
3. Log splitter pumps, valves and cylinders or component parts thereof are covered by a one year warranty.
4. All other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular purpose, are hereby expressly disclaimed in their entirety.
5. The provisions as set forth in this warranty provide the sole and exclusive remedy of MTD PRODUCTS INC's obligations arising from the sales of its products. MTD PRODUCTS INC will not be liable for incidental or consequential loss or damage.

How state law relates to this warranty: This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Certain disclaimers are not allowed in some states and therefore they may not apply to you under all circumstances.

NOTE: This warranty does not cover routine maintenance items such as lubricants, filters, blade sharpening and tune-ups, or adjustments such as brake adjustments, clutch adjustments or deck adjustments. Nor does this warranty cover normal deterioration of the exterior finish due to use or exposure.